

Installation Instructions for the Hi-E2 Burner Replacement Kit

FOR YOUR SAFETY: This product must be installed and serviced by a professional service technician, qualified in pool/spa heater installation and maintenance. Improper installation and/or operation could create carbon monoxide gas in flue gases which could cause serious injury, property damage, or death. Improper installation and/or operation will void the warranty.

These instructions are to be used with the following Replacement Kits:

R0305903-- Hi-E2 Burner Replacement Kit, Model EHE 220

R0305905-- Hi-E2 Burner Replacement Kit, Model EHE 350

⚠ WARNING

If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or death.

This document gives instructions for replacing the burner in all Hi-E2 Model EHE pool/spa heaters. Important information on replacing the gaskets is included in this set of instructions. The instructions must be followed exactly. Read through the instructions completely before starting the procedure.

A. Remove The Burner From The Heater

1. Remove the front panel of the heater (see Fig. 1).
2. Shut the heater down by following the instructions under the heading of "To Turn Off Gas To Appliance" on the label on the inside of the front panel.

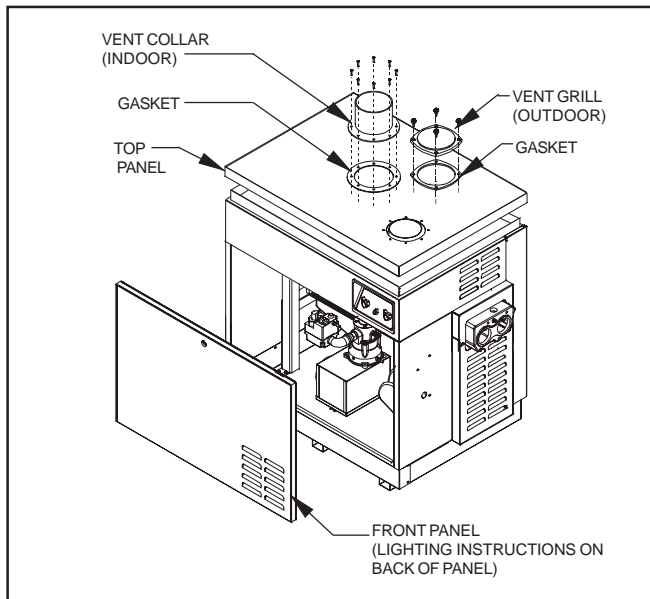


Figure 1- Remove Jacket Panels

3. Remove the exhaust grill and gasket (if outdoor installation) or the vent pipe, vent collar and gasket (if indoor installation), from the top of the heater (see Fig. 1).
4. Remove the top of the heater (see Fig. 1).
5. Remove the seven nuts holding the mixture plenum to the front of the burner (see Fig. 2).
6. Disconnect the wires from the burner high limit switch.
7. Remove all the nuts that hold the burner to the combustion chamber (18 for an EHE 350, 14 for an EHE 220) (see Fig. 2).
8. Pull the burner off of the combustion chamber. The burner was installed using a high temperature sealer at the combustion chamber. You may need to use a screwdriver to pry the burner from the combustion chamber. If this is necessary, use the screwdriver as close to the studs as possible and be careful not to bend the combustion chamber flanges.

B. Clean The Parts To Be Reused

1. Clean **all** the remains of the original gasket and silicon sealer from the flanges of the combustion chamber. Use a putty knife if necessary. Be careful not to leave deep scratches on the flanges. It is important to have a clean, flat, unscratched surface to provide a good seal when the parts are reassembled. Do not allow debris to drop onto the tubes of the heat exchanger. Remove any debris from the top of the heat exchanger. A vacuum cleaner is recommended. Do not touch the element of the hot surface igniter. It is brittle and will crack or break easily.

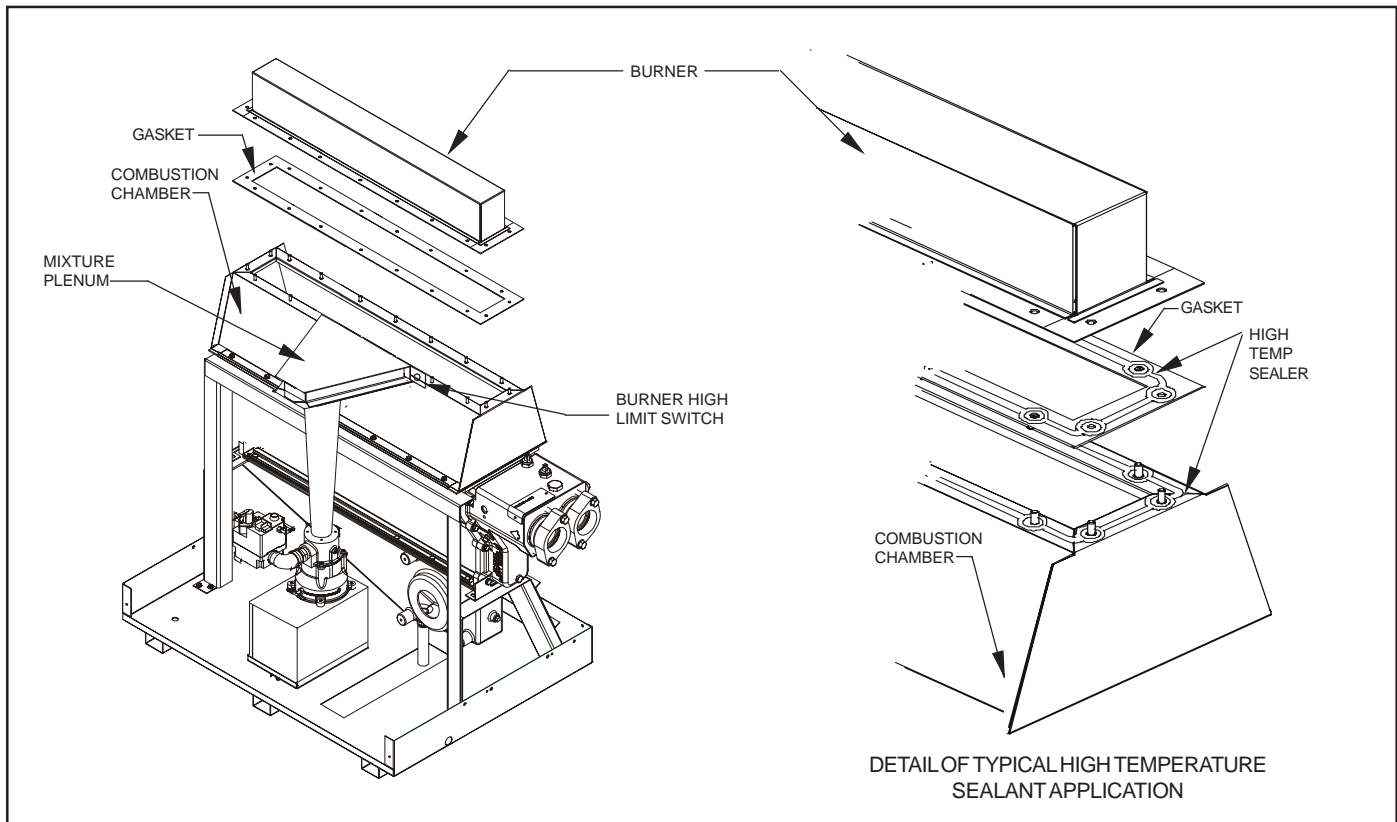


Figure 2- Component Assembly Detail

2. Use the same procedures and precautions to clean the flanges on the mixture plenum.

C. Important Information On Gaskets

General Information

The Hi-E2 pool heater has a fan-assisted combustion system. A specially-designed combustion blower pulls flow through the system, most of which operates at negative pressure (below room pressure). For proper operation of the heater, all gaskets and sealers must be in place and properly installed. Leakage of air into the system can cause operational problems or reduced efficiency.

The exhaust system of the Hi-E2 heater operates at slightly positive pressure due to the resistance of the grille or the vent piping. Sealing of this part of the system is especially important to prevent combustion products and moisture from escaping from the heater or venting.

Gaskets and sealers used for the hot surface joints of the burner and combustion chamber are selected and installed to handle the special requirements at these locations.

To assure proper operation and efficiency, be sure to use only the materials specified in these instructions and installed in accordance with them.

1. The Burner/Combustion Chamber Gasket

The interface of the burner and combustion chamber gets very hot during operation, especially at the edge facing the combustion process. A pliable ceramic fiber gasket and high temperature silicone sealer are used to seal this interface. The flange joints are held together by nuts and lockwashers on studs. The gasket part number is S0090701 for model EHE 220 and S0090703 for model EHE 350. The sealer has been assigned part number X0020700. Note that this sealer is red in color and is rated for high temperature.

Before assembling the parts, be sure to scrape old material or contamination off of the mating surfaces. If there are any gaps at the sheet metal joints (especially at the corners), fill these with a moderate amount of silicone sealer.

Note: Excessive use of silicone sealer can lead to nuisance problems with the ignition system. Stop sealer deposits short of the inside edge of the gasket and parts.

2. Mixture Plenum/Burner

The venturi mixture plenum is fastened to the burner inlet plenum by seven nuts and lockwashers on studs welded to the burner. A flat elastomer gasket, Teledyne Laars part number S0089200, is used between the parts. Sealer is not used. Be sure that the parts are properly aligned and tighten the screws uniformly. Do not tighten so much that the gasket material bulges out of the joint. Be sure to replace the star lockwashers under the nuts.

3. Vent Duct / Top Cover / Exhaust Terminal

The vent duct and exhaust terminal sandwich the top cover between them, with gaskets between parts. This joint is very important, both to assure that exhaust products are not misdirected and to assure satisfactory heater operation.

The exhaust terminal is either a simple grille for outdoor installation (shipped in place) or a vent collar for connection to plastic vent piping. Vent piping and all vent connections are very important because their failure can result in release of exhaust products within a building. A leak under the top cover can result in recirculation of exhaust products through the heater and condensation of combustion product water inside the heater. The latter can result in operating problems with controls.

D. Install The New Burner

1. Install The Combustion Chamber/Burner Gasket

- a. Apply a 1/4" bead of sealer along the centerline of the combustion chamber top flange. Form the bead in a small circle around each stud (see Fig. 2).
- b. Place the gasket over the studs and push it into the sealer.
- c. Place a second 1/4" bead of silicone sealer along the centerline of the gasket surface and in small circles around the studs.

2. Install The New Burner

- a. Place the mixture plenum/burner gasket over the studs on the front of the burner (see Fig. 2).
- b. Place the burner over the studs on the top of the combustion chamber, position as necessary by hand.
- c. Place a lockwasher and nut on each of the studs.
- d. Insert the studs on the front of the burner through the holes on the mixture plenum flanges. Place a lockwasher and nut on each of the studs.
- e. Uniformly tighten the nuts around the burner. Start with the middle nut on the rear flange then tighten the middle screw on the front flange. Then alternate the sequence from rear to front and from left to right so that the fasteners are tightened from the middle toward the outside.
- f. Using the same procedure, uniformly tighten the nuts around the mixture plenum flange.
- g. Reconnect the wires to the burner high limit switch.

3. Restart The Heater

- a. Replace the top of the heater. Be sure that the gasket on the top of the vent duct is still in place and in good condition.
- b. Replace the exhaust grill and gasket (if outdoor installation) or the vent pipe, vent collar and gasket (if indoor installation). Inspect the gaskets to be sure they are not cracked or torn. Be sure that the screws engage the brass inserts in the vent duct under the top.
- c. Restore the electrical power and the gas supply to the heater.
- d. Read the warnings under the heading of "For Your Safety Read Before Operating" on the label on the inside of the front panel.
- e. Ignite the heater by following the instructions under the heading of "Operating Instructions" on the label on the inside of the front panel.
- f. Replace the front panel. The front panel must be in place for the heater to operate properly and safely.

Parts List

Description	Quantity
Burner Assembly	1
Tube High Temperature Silicone Sealer	1
Lockwashers	25
Hex Nuts	25
Burner/Combustion Chamber Gasket	1
Mixture Plenum/Burner Gasket	1
Instructions	1

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